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U. S. DEPARTMENT OF AGRICULTURE
BUREAU OF ANIMAL INDUSTRY

**INSTRUCTIONS FOR EMPLOYEES
ENGAGED IN ERADICATING
FOOT-AND-MOUTH DISEASE**

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U. S. DEPARTMENT OF AGRICULTURE,
BUREAU OF ANIMAL INDUSTRY.

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U. S. DEPARTMENT OF AGRICULTURE,
BUREAU OF ANIMAL INDUSTRY,
Washington, D. C., October 2, 1915.

TO BUREAU EMPLOYEES:

The following information and instructions regarding methods to be followed in the eradication of foot-and-mouth disease are issued for the guidance of bureau employees and others engaged in that work. These instructions are supplemental to the various formal department orders and regulations relating to this subject.

A. D. MELVIN,
Chief of Bureau.

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INSTRUCTIONS FOR EMPLOYEES ENGAGED IN ERADICATING FOOT-AND-MOUTH DISEASE.

INTRODUCTION.

The following instructions are issued for the information and guidance of employees of the Bureau of Animal Industry and others who may at any time be engaged in the eradication of foot-and-mouth disease. These instructions are supplementary to and are intended in no manner to supersede or conflict with any regulations which have been, or later may be, issued by the department.

Veterinary inspectors in all branches of the departmental service and also local practitioners should constantly be on the lookout for foot-and-mouth disease. Notwithstanding the department has taken every practical precaution to eradicate the infection and to prevent the reintroduction of the disease into this country, the infection may recur or again be introduced from abroad. If in the examination of animals any condition may be found that arouses suspicion of foot-and-mouth disease, a careful inspection should be made along the lines herein outlined, and the chief of the bureau immediately informed of the situation by telegraph. In order to keep in mind the symptoms and lesions of the disease, veterinarians should read from time to time Farmers' Bulletin 666, as well as other standard veterinary works on foot-and-mouth disease.

INSPECTION.

Parts to be Examined.—All cattle, sheep, other ruminants, and swine suspected of being infected with foot-and-mouth disease, or where the slightest reason exists as to the

possibility of their being so affected, should be given a careful and systematic examination in order to determine whether or not such infection exists. This inspection should include the mouth, feet, teats, udder, and perineum of cows, for the specific lesions of the disease, and the mouth and feet of sheep, other ruminants, and swine.

Lesions.—The only specific lesion is the vesicular eruption in the form of vesicles or blisters with fluid contents, but next in order of importance in diagnosing the disease is the erosion showing abrupt borders which cause it to present a punched-out appearance. Temperatures of all animals in the herd should be recorded.

Scope of Inspection.—The examination should not be confined to the suspicious animals, but should include all susceptible animals of different species on the farm, and if the suspicion of foot-and-mouth disease is strong, the inspection should extend to animals on adjacent farms. The number of animals affected and a description of the lesions should be noted. Special inquiry should be made into the history of the condition and all information available should be considered with the view of ascertaining if there is any evidence of contagion.

Report to Chief of Bureau.—In all cases of foot-and-mouth disease, even where there are only slight grounds for suspicion of a new outbreak, the matter should be reported IMMEDIATELY BY WIRE to the chief of the bureau and a detailed written report should be forwarded as soon as possible. This report should include a description of the lesions and their location, the number of susceptible animals of each species on the farm, the number of animals of each species affected, the temperature record, and the history, including the evidence, if any, of contagion. At the same time there should be forwarded to the department, in tightly sealed containers, material immersed in a solution of equal parts of glycerin and boiled water for microscopic and inoculation purposes. This material should include

the contents of vesicles where available, and where not available, specimens from the freshest erosions or ulcers should be forwarded.

Inoculation of Test Animals.—In all suspicious instances where a positive diagnosis can not be made, veterinarians should proceed immediately, without waiting for a reply to their report, to make inoculation tests on hogs or calves, preferably yearling calves, in order to ascertain if the disease is transmissible. This may be done through scarification of the gingiva of the test animal, into which may be rubbed (with a clean cob or other swab) some of the vesicular matter or specimens from lesions of the suspected animal, or such inoculation may be made by the use of a hypodermic syringe.

Disinfection on Leaving Premises.—Care should be taken on leaving any suspected premises to disinfect the person and clothing in the manner described in another chapter.

PROCEDURE WHERE INFECTION IS FOUND.

Cooperation with State Authorities.—As soon as the diagnosis has been confirmed by the special representative of the department, the chief of the bureau will invite the proper State authorities to cooperate with the department in the arrest and eradication of the disease, and a veterinary inspector will be designated to take charge of the work. The latter should promptly ask for the necessary help, and cooperate with the State authorities in ascertaining the extent of the outbreak and in formulating State quarantine regulations. He should prevail upon the State authorities to quarantine the infected premises immediately, and endeavor to make arrangements with them to place guards on each of the infected premises day and night to see that the quarantine is preserved.

Quarantine.—The owners of affected herds should be fully instructed concerning the nature of the disease and

the importance of maintaining a strict quarantine. The owners of adjacent farms should also be notified and instructed in order that they may take precautions to protect their herds against infection. The stockyards in the infected districts should be closed immediately and creameries and cheese factories investigated to see that skim milk, buttermilk, and whey are being properly sterilized before being returned to farmers; otherwise they also should be closed.

Publicity.—The widest publicity of the outbreak should be given from the beginning through the daily papers and the distribution of posters, special circulars, and similar literature. Public meetings of farmers and stockmen from the territory bordering the infected area should be called to discuss foot-and-mouth disease and the methods to be employed in eradicating it, with particular reference to the duties of live-stock owners and what will be expected of them. Stock owners from infected farms or adjacent premises should be discouraged from attending these meetings in order to obviate the danger of spreading infection, as all necessary information regarding these matters will be carried to them by veterinary inspectors making farm-to-farm inspections. The veterinary inspector in charge of this work should see to it that representatives of the State authorities, members of live-stock associations, and interested live-stock owners of the community be requested to speak at these meetings.

Transportation of Employees and Equipment.—Arrangements should be made immediately for the transportation of employees and their equipment so there will be no delay when the assistants arrive.

Tracing Shipments.—A report should be secured of all live-stock shipments that have been made from the community since the disease appeared. All suspicious shipments should be traced to destination and back to the

farm where the stock originated in order to ascertain if there was any probability that they were infected when shipped. These precautions should be taken to limit the spread of the disease as quickly as possible.

The veterinary inspectors located at various public stockyards should be informed immediately by telephone or telegraph of any diseased, suspicious, or exposed animals that were shipped from the infected community to public stockyards. A record should be made of all live-stock cars that carried infected or exposed animals out of the infected district, and arrangements made with the various railroad companies for the cleaning and disinfecting of such cars before they are again used.

Tracing Source of Infection.—It is important that an investigation be made immediately to determine if possible the source of infection in order to prevent another outbreak from the same source. Veterinary inspectors should be detailed immediately to scout in the community wherever rumor or suspicion leads in order to locate and quarantine all infected herds as soon as possible. In addition to the scouts, other veterinary inspectors should be detailed to make a careful, systematic inspection of all live stock within a radius of 3 miles or more of the infected premises.

Ordering Supplies.—As soon as the diagnosis of foot-and-mouth disease has been confirmed, the veterinary inspector in charge should order by telegraph or telephone sufficient supplies to meet immediate needs. In order to save time the telephone or telegraph should be used in securing prices from different firms handling the needed supplies. The usual supplies used in combating an outbreak of foot-and-mouth disease are dress-suit cases, rubber goods such as boots, coats, hats, gloves, fumigating capes, also sponges, permanganate of potassium, formaldehyde, bichlorid of mercury tablets, compound solution of cresol, chlorid of lime, and pumps. For each pump there should be ordered

100 feet of 3-ply steam hose and attachments, two spraying nozzles, and an extra supply of leather valves. Implements such as shovels, forks, hoes, scrapers, picks, crowbars, axes, etc., used in connection with the cleaning of the premises before disinfection must also be procured. In order to facilitate the transportation of the pumps and equipment, it is advisable to have made for each outfit a wooden chest fitted with lock and key. This chest should be made like a carpenter's tool chest.

Care of Supplies.—From the beginning a competent lay inspector should be detailed to look after the supplies. His duties should consist in receiving and issuing supplies, keeping records of all supplies received, issued, ordered, or exchanged, and to see that additional supplies are ordered in time, so that they will be received before the supplies on hand are exhausted.

EQUIPMENT OF INSPECTORS.

Personal Disinfection.—All veterinarians and others engaged in the examination of animals for symptoms of foot-and-mouth disease, or who have occasion to visit any premises upon which such animals have been kept, shall be supplied with and make use of the following equipment:

- 1 suit case or other receptacle for carrying department property, disinfectants, etc.
- 1 rubber cape, for use in personal disinfection.
- 1 rubber coat.
- 1 pair rubber boots.
- 1 pair rubber gloves.
- 1 rubber hat.
- 1 wash pan.¹
- 1 disinfecting pan.
- 1 sponge.
- 1 bottle of bichlorid of mercury tablets.
- 1 bottle of formalin.
- 1 bottle of potassium permanganate

¹ Enamel pans should be used, as bichlorid of mercury is reduced in strength by contact with metal.

Upon conclusion of the examination of live stock, and before leaving the premises, each employee should sponge the rubber hat, boots, gloves, and coat, both on the outside and on those portions of the inside which might have become contaminated, with a solution of bichlorid of mercury, of not less than 1-1,000 strength, and if the premises have been found to be infected with disease, in addition, shall fumigate himself by fastening the cape about the neck and placing beneath, upon the ground, the disinfecting pan, into which shall be placed about 2 drams of potassium permanganate over which shall be poured about 1 ounce of formalin; the cape and pan should not be removed until the formaldehyde gas so formed shall have had sufficient time to penetrate all clothing, etc. If used in cold weather it may be found necessary to warm the pan slightly.

Equipment for Guards.—Where guards are maintained on infected premises they should also be supplied with the above equipment, with which they should properly disinfect any person whom it may be necessary to allow to leave the premises.

DISPOSAL OF INFECTED HERDS.

Confirmation of Diagnosis.—As soon as foot-and-mouth disease is reported by a veterinary inspector, the diagnosis should be confirmed by at least one other veterinarian. After the diagnosis has been confirmed, arrangements should be made for the disposal of the animals (digging of a trench, etc.), and while these arrangements are being completed the animals should be appraised.

Appraisal of Animals.—Appraisals are usually made by two appraisers working together, one a representative of the State and one a representative of the Department of Agriculture. Care should be exercised in selecting appraisers in order to see that only men of proper tempera-

ment, good judgment, and who are familiar with the various classes of live stock are chosen for this duty. Appraisements must be made in accordance with the regulations governing the same.

Trenches for Burying Animals.—Where animals are to be disposed of by slaughter and burial, the digging of the trench should be started as soon as possible after the diagnosis has been confirmed. The owner of the affected herd should, if possible, be induced to take the contract for digging the trench, but if the owner refuses, or is unable so to do, a contractor should be hired to do the work. A lay inspector should be detailed where possible to supervise the digging and should be instructed to remain upon the premises until the work is finished. The contract price for the trench should be based on an agreed price of so much per cubic yard, with the further agreement that the trench be completed as quickly as possible. In digging small trenches, the work can be frequently done more quickly and cheaply if done by laborers with picks and shovels, but in digging large trenches contractors should be properly equipped with teams, plows, scrapers, etc. Contracts should be made in writing, stating the amount of dirt to be moved, whether the price is to include covering the animals when killed, and all details, and signed by both the contractor and the agent for the department. Trenches should be about 7 feet deep, 7 feet wide, and long enough to allow all carcasses to rest upon one side at the bottom. The length may be readily calculated by allowing 2 feet per adult cattle. Usually there is room in a trench of this size for the additional number of hogs and sheep found on the average farm, allowing two hogs or sheep for each cow. If the number of hogs and sheep exceeds this proportion, additional space should be provided in specifying the length of the trench. Frequently it will be found advisable to construct a tem-

porary pen at the side of the trench. The animals are driven into the pen, shot, and their bodies rolled into the trench after being dragged to the side of the trench either by laborers or horses. Five or more feet of earth should cover all carcasses. Trenches should be dug at convenient points, near the affected animals, in order that they be not driven over uninfected territory. If the sides and one end of the trench are made perpendicular, with the remaining end sloping, the animals may be generally driven into the trench, and confined there by a gate swung across the open end. In this position they can be slaughtered in such a manner that little labor will be entailed.

Slaughtering the Animals.—No more men than necessary should be kept from other work to do the slaughtering. One inspector in charge and two assistants are usually sufficient to constitute a slaughtering crew, and in the case of small herds two men only are necessary. Handling and slaughter of all condemned animals should be done in the most humane manner possible. Animals should be killed by shooting, and the work should be done by a competent marksman. For this purpose a rifle of sufficiently large caliber to kill instantly should be selected. A .25–20 rifle or some similar gun is recommended. Aim should be taken with a view to destroying the brain.

Slashing Hides and Evisceration of Carcasses.—After slaughter, all animals should have the hides or skins slashed through in such a manner as to destroy the pelts for commercial use. The carcasses should be eviscerated and covered with unslaked lime. The amount of lime used may vary with local conditions, the ability to secure same, etc. A barrel of lime for every 6 to 8 cattle or 12 to 15 sheep or swine is usually sufficient. If the animals are large, additional lime may be used.

Filling the Trench and Disinfecting Implements, etc.—The trench should be filled with earth without

delay, and a representative of the State or department should remain on the premises to supervise this work. The clothing of the men and all implements and articles used shall be disinfected under supervision before they are removed from the premises.

CLEANING AND DISINFECTION OF PREMISES.

Disinfecting Crew.—After the animals are slaughtered and buried, the infected premises should be cleaned and disinfected without delay. A disinfecting crew consisting of an inspector in charge, a lay inspector assistant, and from seven to nine laborers has been found most satisfactory, efficient, and economical. The lay inspector assistant should be competent to take charge of the crew during the absence of the inspector in charge.

Equipment of crew.—The inspector in charge of the disinfecting crew, his assistant, and two nozzle men should be supplied with a complete rubber outfit, consisting of coat, boots, hat, and gloves. Overalls and jumpers should be provided for the remainder of the men. These outer garments should be removed at the end of each day's work and left on the premises, and before moving to another farm or premises should be thoroughly fumigated. In order to hasten the work of cleaning and disinfecting infected premises, the inspector in charge of the disinfecting work should precede his crew with a view of planning the work in advance and inducing the owners to haul out the manure and clean the barns and outbuildings preparatory to disinfection.

All disinfecting crews should be supplied with a spray pump, hose, etc., and disinfectants. (The strength in which the various disinfectants should be prepared is given in the regulations.) The equipment should also include containers for carrying enough disinfectants for a day's work. Milk cans for liquid disinfectants and a

tight sugar barrel for chlorid of lime have been found satisfactory. All other implements found necessary in this work, such as forks, rakes, or shovels, should be purchased by the inspector in charge and the purchase slip, with approval, forwarded to the office under which he is operating.

Destruction of Property.—Upon arrival at infected premises the inspector in charge of the disinfecting crew should make an inspection to ascertain whether it is necessary to destroy any property in order to get rid of the infection. Only such property should be destroyed as is necessary to rid the premises of infection.

Record of Property Destroyed.—An accurate record should be kept of all property destroyed, giving the measurements, kind, and quality. The owner or his representative should be requested to be present when the measurements are taken or other records made of property destroyed, and before leaving the premises the inspector and owner should jointly sign this report. Such statements, or the book in which such records are kept, should be forwarded as promptly as practicable to the office of the inspector in charge of the district in order that vouchers may be prepared and sent to the owner. The following form of statement is suggested:

Owner.....
 Township.....
 County.....State.....
 P. O. address.....

350 feet 2-in. plank;
 500 lbs. timothy hay;
 600 lbs. straw;
 20 grain bags (fair);
 etc.

(Signed).....
 Inspector.

.....
 Owner.

Date.....

Records should be complete in order to avoid the necessity of sending another representative to the premises later to appraise the property destroyed. In order that there may be uniformity in adjusting claims of this kind the inspector in charge of the disinfecting crew should avoid as far as possible setting any price on the property destroyed.

Payment for Property Destroyed.—In settling for property destroyed the inspector in charge of a station should inform himself regarding the price of hay, straw, lumber, etc., in the section where such property was destroyed, and in settling claims allow prices accordingly, making fair allowance for waste in replacing lumber and for hardware, etc.

Cleaning and Scrubbing Buildings, etc.—All manure, loose litter, and trash should be removed from the interior of buildings and burned. Barns and other buildings should be swept down thoroughly and all overhead beams or other projections should be thoroughly cleaned. In case there are stalls, mangers, feed boxes, wooden floors, etc., which are decayed or in such condition that they can not be thoroughly disinfected, they may be torn out and burned after being measured as heretofore described. Before destroying such property the condition of the lumber, the time of exposure, and the opportunity for infection should be taken into consideration, and it should be carefully borne in mind that if the virus of foot-and-mouth disease can be reached by disinfectants it can be killed with less expense than it will cost to tear out and replace.

Disinfection can be more successfully and easily accomplished when the buildings have first been thoroughly cleaned. Manure should be cleaned out of cracks, posts, stanchions, etc., and any contamination by saliva should

be scraped and scrubbed. For this latter purpose a hot solution of sal soda is usually of assistance.

Application and Selection of Disinfectants.—A spray pump is the most satisfactory and effective means of applying disinfectants to large surfaces, such as walls, ceilings, manure piles, hay stacks, straw stacks, etc.

Care should be exercised in selecting suitable disinfectants. A solution of formaldehyde is considered most suitable for hay, straw, harness, blankets, feed bags, lap robes, and finished surfaces of walls, ceilings, etc.

Chlorid of lime is very satisfactory for outside disinfection work where there is plenty of air, as, for instance, manure piles, open sheds, stock pens, ground, etc., but the fumes are very irritating and deleterious to those who attempt to spray with it in closed buildings. Interiors of buildings may be sprayed with compound solution of cresol (U. S. P.), crystal carbolic-acid solution, or some of the other disinfectants prescribed by the regulations. When desirable, a small quantity of unslaked lime may be added to the solution in order to mark where the disinfectant has been applied.

Formaldehyde gas is suitable for disinfecting dwellings, cellars, milk houses, granaries, and other tight buildings. Clothing and other articles that can not be dipped or sprayed may be hung in such buildings and fumigated. Such articles as chains, halters, feed bags, harness, cloth lap robes, etc., should be dipped in a compound cresol solution.

In fumigating buildings with formaldehyde gas, 20 ounces of formalin (40 per cent formaldehyde gas) to 16½ ounces of potassium permanganate are required to disinfect 1,000 cubic feet of air space. A violent chemical reaction takes place immediately when the formalin and permanganate are brought together.

Ordinarily there is no danger of fire by this method. In exceptional cases, however, sparks may be given off from the mixture, so that it is desirable to place the container inside of a large open pot, and to have no combustible material in the immediate vicinity of the generator.

Methods of using this and other disinfectants are clearly explained in Farmers' Bulletin 345, "Some Common Disinfectants."

Infected Hay and Straw.—Where haymows, haystacks, and straw stacks have been infected by animals feeding from the sides or trampling upon it, the exposed sides and top should be thoroughly raked off or cut down for a distance of from $1\frac{1}{2}$ to 2 feet, and the balance of the stack sprayed with a 4 per cent formaldehyde solution. The hay or straw removed from the infected stacks should be measured and burned, a record being kept of the amount destroyed in order that adjustment may be made.

Disposal of Manure.—After manure has been disinfected as described in these instructions, it may, if weather and field conditions permit, be hauled out and spread upon a field to be plowed, and where it is not accessible to swine or ruminants. If it is impossible to disinfect and spread the manure at the time, it should be hauled to some convenient spot, the surface forked over and sprayed with a disinfectant to a depth of from 6 to 10 inches, and the top sprinkled with chlorid of lime or unslaked lime, or a layer of 6 inches of uncontaminated horse manure. A strong pig-proof fence should then be built about the pile. After the removal of this pile of manure the ground upon which it has lain should be limed and left exposed to the sun for a period of not less than 60 days.

All litter and manure which has accumulated in the barn lots prior to the slaughter of the stock must be cleaned up, burned, or thoroughly disinfected. All ground from

which said litter or manure is cleaned up must be left exposed to the sun for a period of not less than 60 days before permission is given to restock.

Disinfection of Dogs, Poultry, etc.—Immediately upon the quarantine of infected premises, all dogs, poultry, etc., should be confined until disinfection of the premises is completed. Before being released such poultry, dogs, etc., should be dipped under the supervision of an inspector. Such animals may be dipped in a slightly warmed solution, containing about 2 per cent of compound solution of cresol, or disinfected in such other manner as may be prescribed by the chief of the bureau.

Thoroughness Essential.—Disinfection work should be completed as rapidly as possible, but it should be borne in mind that thoroughness is essential to the success of the work. If conditions are such that improvements can be suggested in the manner of disinfection herein prescribed such plans should be immediately reported to the inspector in charge of the work.

DISINFECTION OF CARS.

Period of Exposure.—All railroad cars which have carried live stock in any quarantined area within a period of 15 days of the date of an outbreak of the disease, except those cars that have already been cleaned and disinfected since last used, shall be cleaned and disinfected, and all manure or litter removed from infected or exposed cars and stockyards shall be burned or disinfected. During winter weather any immovable frozen material on the floors of cars shall be covered with air-slaked lime not less than 2 inches deep.

Method.—The rules for cleaning and disinfecting cars should be essentially those governing the disinfection of

buildings, and care should be taken that all corners and crevices are reached and cleaned.

Records of Cars Cleaned.—All employees supervising the work of cleaning and disinfecting cars should be instructed to take the numbers and initials of the cars cleaned and disinfected from the cars and not from the railroad records, and to make a careful check of the same before reporting. When the car reported cleaned and disinfected is not a live-stock car, the class of car to which it belongs should be clearly indicated, as "box," "gondola," etc.

FARM-TO-FARM INSPECTION.

Area to Cover.—Farm-to-farm inspection should cover areas from 3 to 5 miles in radius from infected farms. This order, however, need not be followed literally in such instances where there are natural barriers or boundaries such as rivers, mountains, or forests. On the other hand, when infection has occurred on several places along a frequently used public highway, it would be advisable to proceed along this highway and inspect premises for a distance of probably 5 miles. As a general proposition farm-to-farm inspection should extend to all premises situated in any community where there is reason to believe infection may exist.

Number of Inspections.—At least two, and frequently four or five systematic inspections should be made of all live stock in the neighborhood of infected premises. The first inspection should commence as soon as the affected herd is discovered, and it should extend for 2 or 3 miles in every direction from the infected premises. Not more than 15 days should intervene between the first and second inspections, and the second inspection should be extended to include all susceptible animals within a radius of 5 miles of the infected premises.

Record of Inspections.—Each inspector should keep a record of all inspections made in a field book provided for the purpose. This record should show the names of the liveryman who furnished the rig, the price, the name of each owner of animals inspected, number of animals of each species inspected, and the condition of the animals when inspected. The veterinary inspector detailed to make the second or subsequent inspections should have with him a record of the previous inspections to guide him.

Equipment of Inspectors.—Inspectors detailed to make farm-to-farm inspection should each be provided with a suit case, rubber goods, including hat, coat, gloves, boots, and fumigating cape, thermometer, flash light, bichlorid tablets, permanganate of potassium, and formaldehyde.

Procedure.—Inspectors on reaching premises where live stock is to be inspected should always put on their rubber outer garments before or immediately on alighting from their conveyance, and they should always thoroughly wash their rubber garments before leaving the premises. If foot-and-mouth disease is found, or any condition that is suspicious of foot-and-mouth disease, the inspector should, in addition to washing his rubber garments, fumigate his clothing with formaldehyde gas before leaving the premises. The greatest care should be exercised to prevent carrying infection from diseased to healthy herds and to avoid criticism on account of apparent carelessness.

Field Headquarters.—Headquarters should be centrally located if possible. If the outbreak extends over a large area the territory should be divided into districts, and a substation established in each district. A competent veterinary inspector should be detailed to take charge in each district. He should be furnished with the necessary assistants and equipment and should be held responsible for the efficient conduct of the work in his district.

Reports to Headquarters.—At the end of each day's work the inspector in charge of each substation should be required to make a report to headquarters by telephone, telegraph, or otherwise, showing:

1. Number of new infected herds discovered.
2. Number of infected herds slaughtered.
3. Number of infected herds awaiting slaughter.
4. Number of infected herds appraised.
5. Number of infected herds awaiting appraisal.
6. Number of trenches ready.
7. Number of trenches digging.
8. Number of premises disinfected.
9. Number of premises where herds have been slaughtered and the premises are ready for disinfection.

When this knowledge has been collected for an entire district, the inspector in charge should forward these facts in a night letter (telegram) to the Washington officials for their information.

MISCELLANEOUS.

Forwarding Reports.—Inspectors in charge should forward promptly to the bureau at Washington all forms provided for the purpose of keeping records of animals infected, slaughtered, disinfection of premises, etc. In addition to these, daily telegraphic letters should be forwarded each night giving a list of the herds and territory found infected and such other information as may be of value or interest.

Inspectors engaged in locating infected herds should include in their reports the manner in which infection was carried to the herds, and any other items of value. Reports should be filled out carefully and in a legible manner.

Resistance to Inspectors.—Where inspectors are forbidden admittance to premises, or to make examination of animals in suspected territory, no physical force should be offered. Every effort should be made, however, courte-

ously to convince the owner of the premises or stock of the necessity for making such examination. Failing to secure admittance to proceed, the inspector should notify the station inspector in charge, who shall immediately take the matter up with the State officials with a view to having the inspector accompanied by a local police official. Pending admittance to the premises or animals, the inspector should immediately call upon the State authorities to place such premises or animals under close quarantine, under guard, until the examination can be made.

Where inspectors are forcibly assaulted no resistance should be shown except that actuated by self-defense. Telegraphic notice should be at once forwarded, through the inspector in charge, to the Washington office, who will advise of the legal action to be taken.

Shipments from Quarantined Areas.—In some instances shipments from quarantined areas, where shipment has been permitted for immediate slaughter only, have been diverted or sold at point of destination as stockers or feeders, and infection of new territory has resulted. Efforts should be made to see that shipments of stock so consigned are slaughtered with as little delay as possible, and the cooperation of the State authorities should be enlisted to this end.

Where infection is discovered following any violation of the quarantine regulations no appraisalment should be made by bureau inspectors of animals so handled without special authorization from the chief of the bureau.

Infection at Establishments under Federal Meat Inspection.—Where animals are found infected in the pens of an establishment under Federal meat inspection the carcasses should be condemned under the meat-inspection regulations. The hides from these carcasses may be immersed for not less than four hours in a mixture composed of 1 part of bichlorid of mercury to 1,000 parts

of salt solution of a strength not less than 15 per cent to saturation, and the usual system of thorough disinfection followed. Particular efforts in this direction should be made as regards clothing of workers (which should be sterilized), knives, utensils, killing floors, knocking and bleeding pens, alleys, chutes, and exposed pens of the establishment where infected animals have traversed, as well as the car or cars in which the animals were shipped.

Reporting Unexpended Property at Completion of Work.—Upon completion of the work at the end of an outbreak bureau employ  es should furnish the Washington office with an alphabetical list in duplicate of all the non-expendable property in their possession, used especially in connection with foot-and-mouth disease, giving the condition of the various articles. As soon as pumps, guns, tools, hoes, picks, etc., are no longer needed for constant use they should be properly and thoroughly cleaned and all articles that are liable to rust should be coated with vaseline or oiled or painted. Hoes, rakes, shovels, etc., should be bundled and securely wired together and preparations made for boxing or otherwise packing other articles for shipment in compliance with instructions.



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